

**WIPER-TYPE PHASE SHIFTER WITH CANTILEVER SHOE AND
DUAL-POLARIZATION ANTENNA WITH COMMONLY DRIVEN PHASE SHIFTERS**

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ABSTRACT OF THE DISCLOSURE

A wiper-type phase shifter with a cantilever shoe that ensures that the electrical contact on the wiper arm remains in electrical communication with the transmission trace located on the antenna backplane without relying to an element, 10 such as a spring-loaded set screw, that passes through the backplane. The cantilever shoe thus provides a wiper hold-down mechanism without requiring holes or slots through the backplane, which could allow rain or other elements to get inside the antenna enclosure. A dual-polarization antenna that includes a wiper-type phase 15 shifter for each polarization. The wiper arms define gear portions that engage each other, which allows a single actuator, typically located on the rear of the backplane opposite the location of the wiper arms, to drive both wiper arms in a coordinated manner. The antenna is suitable for use as a wireless base station antenna.